

Improvements to Data Access at NCEI

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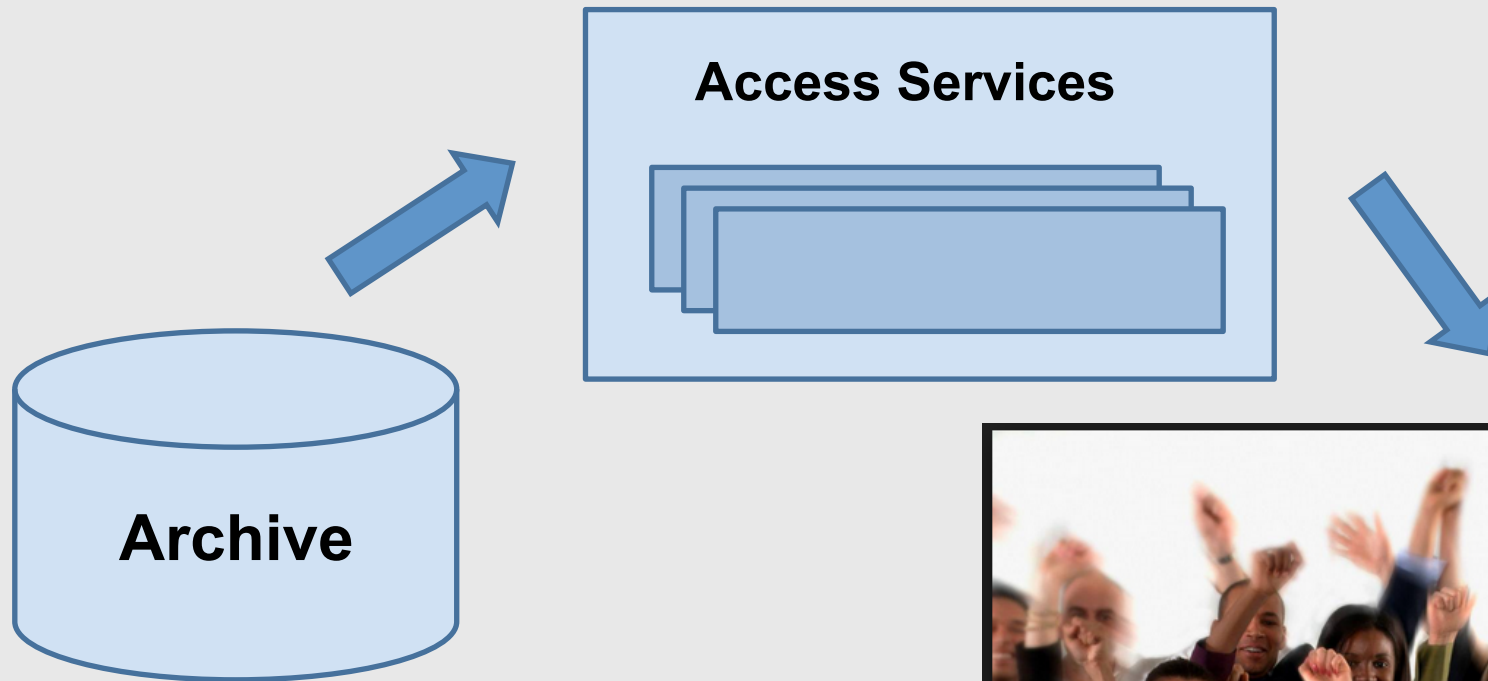
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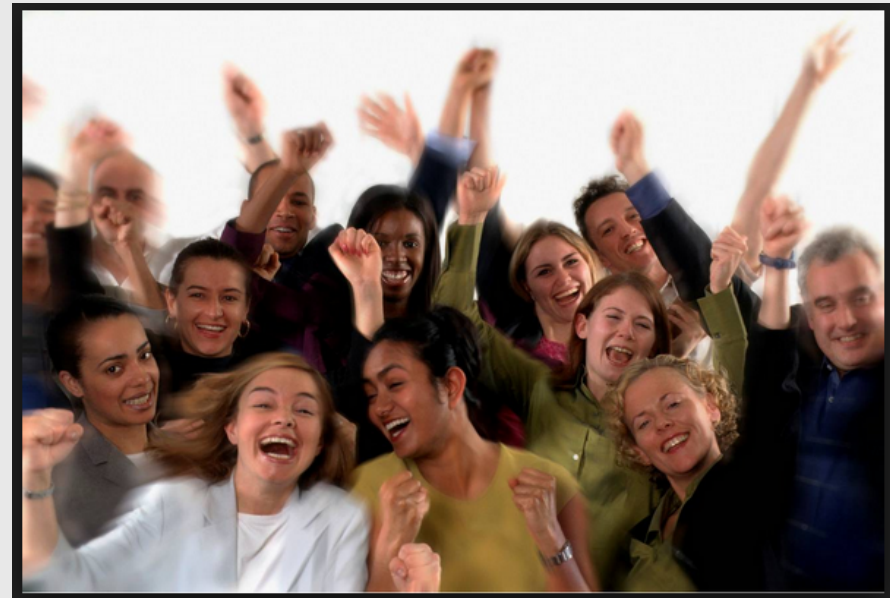
NOAA Satellite and Information Service | National Centers for Environmental Information



Data Access – Overview

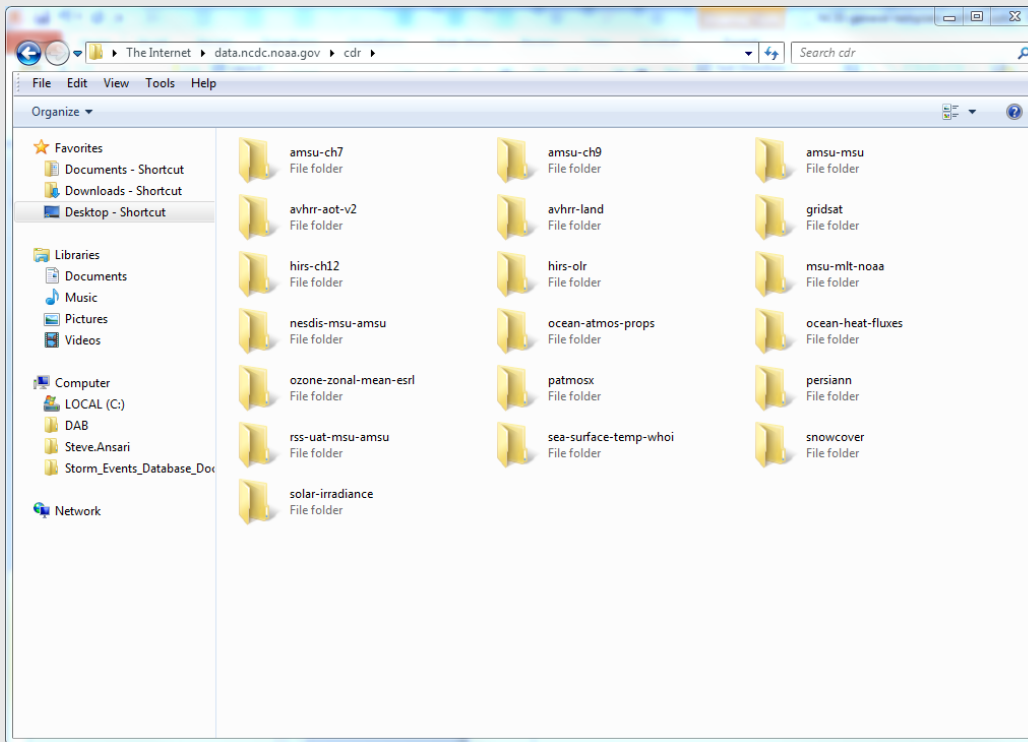


Current Status...
Future Improvements?



Data Access – Current Status

FTP Download



The screenshot shows a web browser window with the address bar set to 'ftp://data.ncdc.noaa.gov/cdr'. The page title is 'Index of /cdr'. The page contains a table with three columns: 'Name', 'Size', and 'Date Modified'. The table lists the contents of the directory, including a list of folders and their sizes and modification dates.

Name	Size	Date Modified
[parent directory]		
amsu-ch7/		7/23/15, 4:47:00 PM
amsu-ch9/		7/23/15, 4:48:00 PM
amsu-msu/		8/27/14, 12:00:00 AM
avhrr-aot-v2/		9/23/14, 12:00:00 AM
avhrr-land/		12/16/14, 12:00:00 AM
gridsat/		2/24/15, 5:32:00 PM
hirs-ch12/		9/23/14, 12:00:00 AM
hirs-olr/		5/18/15, 2:43:00 PM
msu-mlt-noaa/		9/23/14, 12:00:00 AM
nesdis-msu-amsu/		7/17/15, 5:53:00 PM
ocean-atmos-props/		1/26/15, 12:00:00 AM
ocean-heat-fluxes/		1/26/15, 12:00:00 AM
ozone-zonal-mean-esrl/		3/20/15, 12:22:00 AM
patmosx/		8/27/14, 12:00:00 AM
persiann/		7/23/15, 11:51:00 PM
rss-uat-msu-amsu/		7/17/15, 4:22:00 PM
sea-surface-temp-who/		1/26/15, 12:00:00 AM
snowcover/		7/17/15, 4:20:00 PM
solar-irradiance/		7/22/15, 4:48:00 PM

Data Access – Current Status

THREDDS Data Server

- HTTP Download
- Aggregations
(virtually stack all files/timesteps as a single huge file)
- NetCDF Subset
- OPeNDAP
- Web Map Service
(integrating with GIS and Web Mapping [\[example\]](#))



NCDC TDS Installation

THREDDS Data Server

Catalog <http://www.ncdc.noaa.gov/thredds/oisst-ca>

Dataset: NCDC THREDDS Data Server/Optimally

- *Data type:* GRID
- *ID:* OISST-V2-AVHRR_agg_combined

Access:

1. **OPeNDAP:** [/thredds/dodsC/OISST-V2-AVHRR_agg_combined](#)
2. **WCS:** [/thredds/wcs/OISST-V2-AVHRR_agg_combined](#)
3. **WMS:** [/thredds/wms/OISST-V2-AVHRR_agg_combined](#)
4. **NetcdfSubset:** [/thredds/ncss/grid/OISST-V2-AVHRR_agg_combined](#)
5. **NCML:** [/thredds/ncml/OISST-V2-AVHRR_agg_combined](#)
6. **UDDC:** [/thredds/uddc/OISST-V2-AVHRR_agg_combined](#)
7. **ISO:** [/thredds/iso/OISST-V2-AVHRR_agg_combined](#)

Properties:

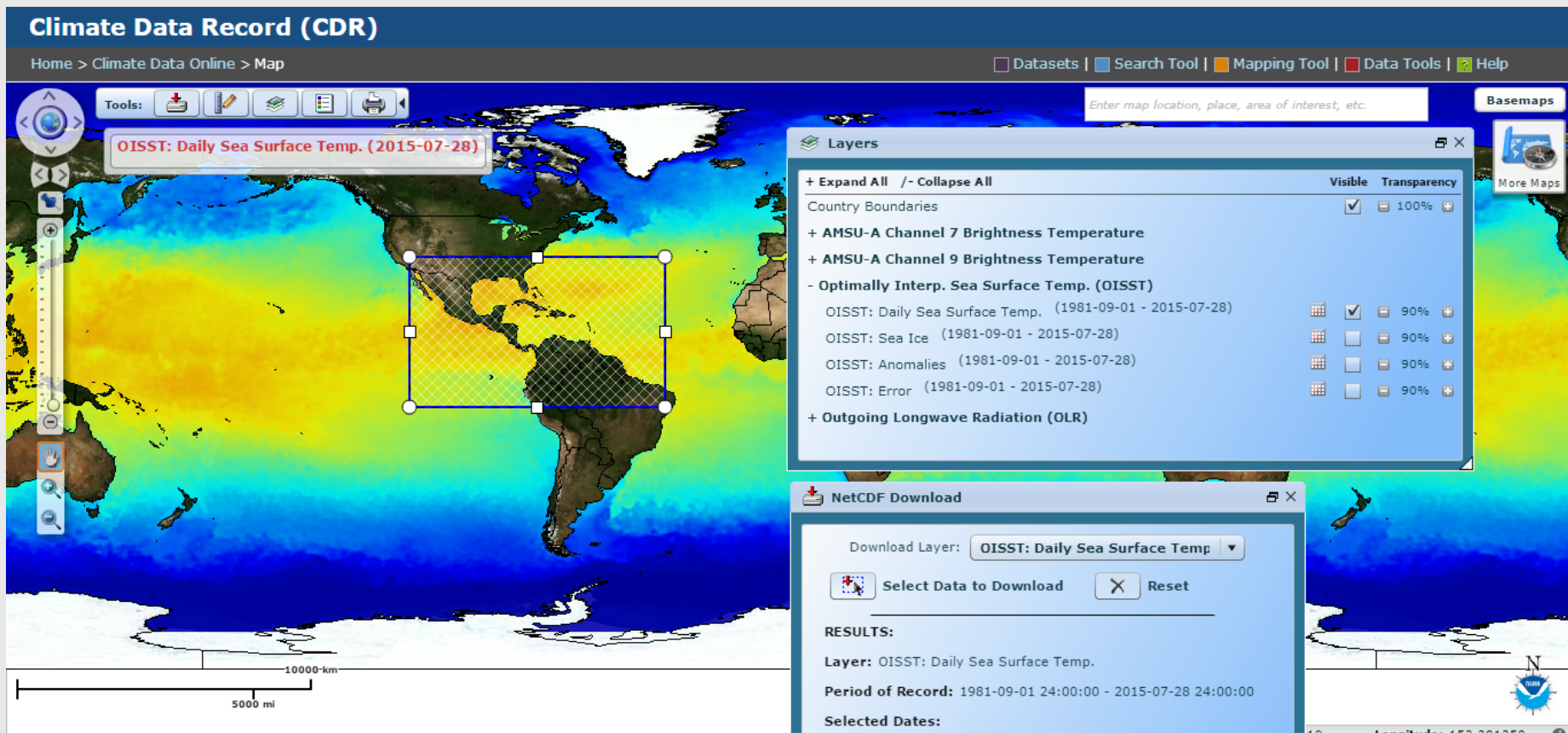
- viewer = "<http://www.ncdc.noaa.gov/wct/wct-jnlp.php?singlefile={OPEN}>

Viewers:

- [Integrated Data Viewer \(IDV\) \(webstart\)](#)
- [NetCDF-Java ToolsUI \(webstart\)](#)
- [Godiva2 \(browser-based\)](#)
- [NOAA Weather and Climate Toolkit \(webstart\)](#)

Data Access – Current Status

NCEI Online Mapping





Data Access – Current Status

[NCEI Online Mapping](#)

- Only a few CDR datasets available
 - AMSU Ch7, AMSU Ch9, OISST, OLR (daily & monthly)
- Built on gridded, aggregated data in THREDDS
- Uses services provided by THREDDS to display and subset
- 100 MB and single variable subset limits

Data Access – Current Status

Archive Ordering System

- Submit orders for data that reside only on the archive tapes.
- Includes large CDRs that are too large or complex to efficiently serve from disk.
- Currently 5 CDRs are available.

■ AVHRR Reflectance - PATMOS-x CDR and AVHRR Cloud Properties - PATMOS-x CDR

Select Satellite ID
NOAA-17, NOAA-17 (08/24/2002 - 01/10/2009) ▼

Select Node (sort by - [Node](#) / [Description](#))
asc - Ascending Node
des - Descending Node

Select Start Date (YYYY/MM/DD)
2015 ▼ / 07 ▼ / 23 ▼

Select End Date: (YYYY/MM/DD)
2015 ▼ / 07 ▼ / 23 ▼

Delivery Destination: FTP

Submit Batch (skip file selection)?: ☐ Yes ☒ No

Email Address



Data Access – The Problem

Problem:

No simple, single user interface to order and subset ALL CDR data.

Solution:

User-friendly consolidated access system for CDR data.
Supports access to CDR data stored in multiple NCEI storage solutions. Eliminates need for users to navigate multiple access systems.

Data Access – Future Improvements

Dataset Discovery:

- Text Search
- Date Search
- Bounding Box Search
- GCMD Keyword Filter
- Driven by the ISO Metadata

Data Tools: Dataset Search Tool

Search Datasets

Enter Search Text

Search Text

Select Date Range

	Year	Month	Day
Start Date	+	+	+
	YYYY	MM	DD
	-	-	-

	Year	Month	Day
End Date	+	+	+
	YYYY	MM	DD
	-	-	-

Select a Bounding Box

North		
<input type="text"/>		
West		East
<input type="text"/>		<input type="text"/>
South		
<input type="text"/>		

Select Data Types

Show All / Hide All | Select All / Deselect All

AVHRR Cloud Properties - PATMOS-x

The PATMOS-x Cloud Properties CDR contains four fundamental cloud variables: 1) Cloud Optical Thickness; 2) Cloud Particle Size; 3) Cloud Temperature; and 4) Cloud Emissivity.

[Search](#) | [Download](#)

[Documentation & Samples](#)

Geostationary IR Channel Brightness Temperature - GridSat B1

The Gridded Satellite (GridSat-B1) data provides a uniform set of quality controlled geostationary satellite observations for the visible, infrared window and infrared water vapor channels.

[Download](#)

1-2 of 2

Data Access – Future Improvements

Data Selection:

- Supports Time, Geographic and Variable Subsetting.
- Order WITHOUT selecting files!
- Or select files if needed

Data Tools: Climate Data Record (CDR) Data Search

Search Datasets

Select Dataset

Dataset

Select Date Range

	Year	Month	Day
Start Date	+	+	+
	2000	07	29
	-	-	-

	Year	Month	Day
End Date	+	+	+
	2000	07	29
	-	-	-

Select a Bounding Box

North		
<input type="text"/>		
West		East
<input type="text"/>		<input type="text"/>
South		
<input type="text"/>		

RESET

SEARCH

Search Result Summary

TODO: explain what this summary is, what the limits are, and what to do with the buttons

8

66.06 MB

HIDE FILES

ADD TO CART

ADD SELECTED FILES TO CART

Select All 8 Results

GridSat-B1.2000.07.29.03.v01r01.irwin.nc

Size: 8.12 MB

Begin: 2000-07-29T03:00:00

End: 2000-07-29T05:59:59

GridSat-B1.2000.07.29.15.v01r01.irwin.nc

Size: 8.33 MB

Begin: 2000-07-29T15:00:00

End: 2000-07-29T17:59:59

Data Access – Future Improvements

Submit Order:

- Shopping Cart based design.
- Clear layout of order summary
- Users contacted via email when order is complete.
- Links to tools, such as [NCEI-provided Weather and Climate Toolkit](#)

Cart

Confirm your email address and order details below . Use the buttons to edit or remove orders.

Enter email address

Please enter your email address twice for validation.

Email

Confirm Email

[ADD MORE TO CART](#)

FALSE

[X CLEAR CART](#)

ORDER DETAILS

[EDIT](#) [\[X\] REMOVE](#)

Data Set	gridsat
Date Range	2000-07-29T00:00:00.000Z to 2000-07-29T23:59:59.000Z
Bounding Box	North: 31.035 , South: 28.035 , East: -88.280 , West: -91.280
File(s)	GridSat-B1.2000.07.29.03.v01r01.irwin.nc, GridSat-B1.2000.07.29.15.v01r01.irwin.nc, GridSat-B1.2000.07.29.00.v01r01.irwin.nc, GridSat-B1.2000.07.29.09.v01r01.irwin.nc, GridSat-B1.2000.07.29.12.v01r01.irwin.nc
File Size	66.06 MB
Format	NetCDF



Data Access – Future Improvements

Faster Updates:

- Improvements to data flow management at NCEI's Data Access Branch.
- Data will be available by FTP/THREDDS within 24 hours of archiving.



Data Access – Future Improvements

Summary:

- Existing access to CDRs could be more consistent and user-friendly.
- Existing access is structured for bulk downloads and standards-based web services and interoperability.
- A consolidated user-friendly access system is under development.
- The new access system still has months of development and testing before initial release.
- Faster updates to data on FTP and THREDDS are coming soon!

THANK YOU! QUESTIONS?

Data Access – Future Improvements

Weather and Climate Toolkit:

- Desktop or command-line tool for Windows/Mac/Linux
- Simple visualization, animations and tools
- Data Export to common formats, such as GIS

